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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,848	10/22/2003	Edward Tygard	1054	4220

27649 7590 11/27/2006

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#40

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WASHINGTON, DC 20036

EXAMINER

KEENAN, JAMES W

ART UNIT

PAPER NUMBER

3652

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/689,848

Applicant(s)

TYGARD, EDWARD

Examiner

James Keenan

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 62-64, 75, 76, 83, 85 and 90-102 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 62-64, 75, 83, 85 and 90-102 is/are rejected.
- 7) ☒ Claim(s) 76 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 3652

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/21/06 has been entered.

2. Claims 62 and 96 are objected to because of the following informalities:  
"pivoting" is spelled wrong in claims 62 and 96; "degree" is spelled wrong in claim 62.  
Appropriate correction is required.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 62, 63, 85, 90-93, and 95-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tygard (US 5,516,255, previously cited) in view of Kawamura (US 3,796,332, previously cited).

Tygard shows a clamping apparatus for grasping a rectangular layer of articles on a pallet from four sides and lifting the layer, comprising four clamping arms mounted on a frame for pivoting about a single degree of freedom to grasp the rectangular load from four sides, wherein each clamping arm includes a contact portion for contacting the

Art Unit: 3652

load, a lever portion pivotally connected to the frame and the contact portion, and a drive mechanism for pivoting the clamping arm with respect to the frame.

Although Tygard shows the clamping arms able to adjust to different sized loads (see figs. 3B, 3C), it does not utilize a four-bar linkage which controls an angle of the contact portion with respect to the vertical as the clamping arm pivots.

Kawamura shows a clamping apparatus comprising frame 7 to which four clamping arms 12-15 are pivotally mounted, each including contact portion 16-19 respectively, and drive mechanisms 26-29, wherein each of the clamping arms defines a parallel four bar linkage comprised of a lever portion and a control rod both respectively pivoted to the frame and the contact portion, so that the contact portions of the clamping arms maintain a constant angle with respect to vertical as the clamping arms are pivoted relative to the frame by the drive mechanisms.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Tygard such that it utilized a four-bar linkage to control the angle of the contact portion of each clamping arm, as shown by Kawamura, as this would be a more effective means of enabling the clamping arms to properly pick up loads of varying size.

Re claims 85, 90, and 91, Tygard teaches the method steps as claimed.

Re claim 92, to have set the contact portions such that they contacted the load at a downward slope of 2-6 degrees with respect to the side of the load would have been an obvious design expediency based on the characteristics of the load to be handled. Note that the claim does not require the angle of the contact portion to be adjustable.

Re claim 93, each contact portion has "a ... planar surface ... extending between an upper and a lower edge" (emphasis added) thereof, as broadly claimed.

Re claim 95, based on the size of the apparatus, the contact portions of the arms are inherently considered "capable of being spaced from each other by at least 28 inches", as broadly and functionally claimed.

Similarly, re claims 96-102, the separation distance between the contact portions can clearly change by the various dimensions without the angle of the contact portion with respect to vertical changing by more than the various angles.

5. Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura in view of Guignard et al (US 2,348,899).

Kawamura does not show the ability of the angle of the contact portion to be changed by adjusting the length of the control rod.

Guignard et al shows a lift arm comprising a parallel four bar linkage system 25-28 for maintaining a load handling implement 42 at a constant angle with respect to vertical and which also includes a rigid adjustable-length rod (fig. 4 embodiment, page 3, lines 34-55) which changes the angle of the implement relative to the arm by adjusting the length of one of the link elements of the four bar linkage.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Kawamura by adding a tilt mechanism for the contact portion of the clamping arms, as suggested by Guignard et al, as this is

Art Unit: 3652

shown to be a desirable feature for improved pick-up and depositing of loads such as boxes or crates.

6. Claims 64, 75, 83, and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tygard in view of Kawamura, and further in view of Guignard et al.

Tygard as modified by Kawamura does not show the control rod used for adjusting the angle of the contact portion with respect to the vertical by being rigid and adjustable in length.

As noted above, Guignard et al shows a lift arm comprising a parallel four bar linkage system for maintaining a load handling implement at a constant angle with respect to vertical and which also includes a rigid adjustable-length rod.

It would have been obvious for one of ordinary skill in the art at the time of the invention to have modified the apparatus of Kawamura by utilizing a rigid adjustable length control rod for adjusting the angle of the contact portion of the clamping arms, as suggested by Guignard et al, as this is shown to be a desirable feature for improved pick-up and depositing of loads such as boxes or crates.

Re claim 94, Tygard shows lever portion to pivot about a single degree of freedom, as noted above. The contact portion of the clamping arms of Kawamura include elongated rigid panels with a surface to oppose a load, as clearly shown in the drawings, and "mounting lugs" pivotably connected to the lower ends of the lever portions and control rods, as at 20, 21, etc. Thus, the structure of the modified clamping apparatus of Tygard would include these features.

Art Unit: 3652

7. Applicant's arguments filed 9/21/06 have been fully considered but they are not persuasive.

Applicant argues that there is no motivation to combine Tygard and Kawamura, alleging that they are for picking up different types of articles in different environments. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references show overhead grapples with four pivoting clamping arms. Kawamura specifically states that the parallelogram four bar linkage allows improved handling of the articles to be picked up based on varying shape and size thereof, and thus provides adequate motivation to modify Tygard.

8. Applicant's arguments with respect to claims 64, 75, 83, and 94 have been considered but are moot in view of the new ground(s) of rejection.

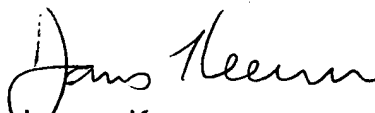
9. Claim 76 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 3652

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Keenan whose telephone number is 571-272-6925. The examiner can normally be reached on (schedule varies).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
James Keenan  
Primary Examiner  
Art Unit 3652

jwk  
11/22/06